WILDLIFE MANAGEMENT AND RESEARCH NOTES

INDIANA DIVISION OF FISH&WILDLIFE

No.	Author	Date
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	Title: 2008 Spring Northern Bobwhite Whistle Count Survey	

Abstract: *Spring whistle counts have been conducted annually throughout Indiana since 1947 (except 1958-1976) to assess changes in bobwhite abundance. The number of whistling quail were counted at 15 stops along 82 routes in 2008. Data were only included in the analysis if routes were surveyed in both 2007 and 2008. Considering only these routes (n = 79), the statewide mean number of bobwhites heard per survey stop in 2008 ($\bar{x}$ = 0.68 ± 0.08) was similar (P = 0.16) to the number heard in 2007 ($\bar{x}$ = 0.62 ± 0.08). Likewise, regional indices generally did not differ between years (P > 0.10) except for the central region which increased 30.5% (P = 0.04).*

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The northern bobwhite is widely distributed throughout eastern North America and Mexico and is one of the most important game birds in the southern and mid-western United States. In Indiana, there are approximately 20,000 quail hunters that annually harvest nearly 30,000 birds. To monitor the bird's annual abundance, the Indiana Division of Fish and Wildlife conducts roadside counts of whistling bobwhites each spring to monitor changes in population abundance. Survey results are used to formulate management priorities, set harvest regulations, and evaluate habitat improvement programs.

Methods

The Indiana Division of Fish and Wildlife conducts road-side counts of whistling bobwhites each spring to monitor changes in population abundance. These counts have been conducted annually since 1947 with a lapse between 1958 and 1976 due to personnel issues. Currently, 82 routes are established across 79 counties and are surveyed during the month of June. Observers record the number of quail heard whistling during 3 minute periods at 15 different stops along each route. The routes are 15 miles in length and listening stops are spaced at approximately 1-mile intervals along each route. Counts start at sunrise and are not conducted during precipitation events or when winds exceeded 12 mph. Only data from routes surveyed in both years were used to assess annual changes in the bobwhite breeding population. A paired t-test was used to compare indices of abundance between 2007 and 2008 within each of Indiana's 4 bobwhite management regions (Figure 1).

Results

In 2008, a total of 81 routes were surveyed in 78 counties between 6 June and 30 June. During 2007 and 2008, only 79 routes in 76 counties were conducted in both years and data from only these routes were used to draw statistical comparisons between indices of bobwhite abundance. Statewide, the number of bobwhites heard per stop in 2008 ($\bar{x}$ = 0.68 ± 0.08) was similar to the number heard per stop in 2007 ($\bar{x}$ = 0.62 ± 0.08; Table 1). Additionally, the number of bobwhites heard per stop in 2008 did not differ ($P > 0.10$) from the number heard in 2007 within 3 of the 4 physiographic regions of the state (Table 1); the number of quail heard per stop in the central region had increased significantly (30.5%; $P = 0.04$).

Discussion

Despite the similarities between the 2007 and 2008 statewide breeding populations, and some improvement in the central region of the state, long-term trend data continues to show that the northern bobwhite population remains well below numbers observed in past decades (Figure 2) in all 4 of Indiana's physiographic-quail survey management regions (Figure 2). The severe winter weather of the late 1970s definitely took a toll on Indiana's bobwhite population. However, if suitable habitat had been available following these weather events, the population would certainly have recovered. Changes in federal farm programs, along with changes in farming practices, were the primary reasons that the population did not recover fully after those severe winters. In fact, Indiana's bobwhite population had already begun to decline prior to the winter storms of 1978 and 1979 due to these same reasons (Figure 2). In the late 1960s and early 1970s there was upwards of 4 million acres of farmland enrolled in USDA land retirement programs. The number of idled acres in Indiana began to decline in the mid-1970s due to changes in USDA programs. The severe winter weather in the late 1970s only accelerated the bobwhite's decline and the continued loss of habitat following those winters is the primary reason the population has not been able to recover. Currently, little more than 295,500 acres of farmland are idle across the state through the Conservation Reserve Program (CRP). This equates to more than a 90% loss of potential game bird habitat when compared to the late 1960s and early 1970s. As time goes on, less and less land can be restored to game bird habitat because it is being swallowed up by urban and suburban development.

However, Indiana landowners can help create suitable habitat for bobwhites by taking advantage of some federal programs including the Continuous Conservation Reserve Program (CCRP) administered by the USDA Farm Service Agency. There are 3 CCRP practices in particular that are available to Indiana landowners and can create a noticeable benefit for Indiana's upland game: 1) CP-21 – filter strips, 2) CP-33 – upland wildlife buffers, and 3) CP38 – State Acres for Wildlife Enhancement (SAFE). These conservation practices provide essential nesting cover for quail and other game birds while lessening erosion and improving water quality. For more information about these and other federal programs, contact your local USDA service center. The Indiana Division of Fish and Wildlife also has programs that can provide landowners with support and funds to establish and/or maintain game bird habitat. These programs include the Wildlife Habitat Cost-Share Program, the Game Bird Habitat Development Program, and the Quail Habitat Incentives Program. For information about these programs, contact your local district biologist or visit: http://www.in.gov/dnr/fishwild

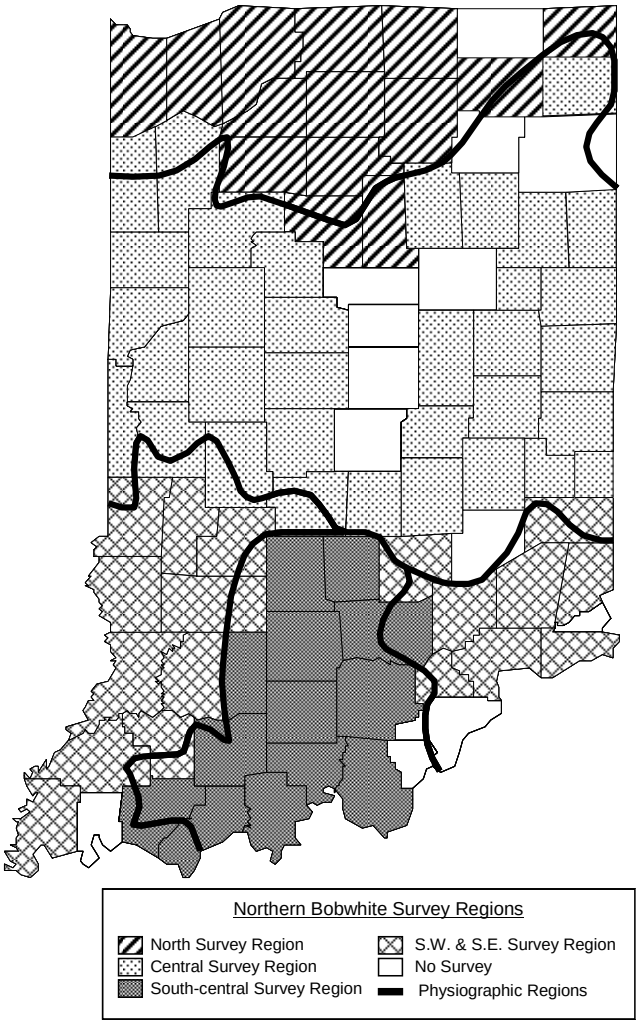

Figure 1. Map illustrating the counties included in each of Indiana's 4 northern bobwhite survey regions. The survey regions approximately correspond to the physiographic regions of Indiana described by the U.S. Fish and Wildlife Service.

Table 1. Number of northern bobwhites heard per stop ($\bar{x}$ ± SE) along 79 paired survey routes within Indiana's 4 bobwhite management regions, 2007-2008.

		Mean Bobwhites Heard Per Survey Stop			
Region	*n*[a]	2007	2008	% Change	*P*
Statewide	79	0.62 ± 0.08	0.68 ± 0.08	9.8%	0.16
North	14	0.37 ± 0.25	0.36 ± 0.18	-3.8%	0.84
Central	33	0.31 ± 0.06	0.41 ± 0.07	30.5%	0.04
South-central	13	0.86 ± 0.23	0.85 ± 0.24	-1.8%	0.91
Southeast-west	19	1.16 ± 0.18	1.27 ± 0.18	9.3%	0.40

[a] Includes all routes surveyed in both 2007 and 2008 (includes zero routes).

Figure 2. Mean number of northern bobwhite heard at each survey stop within Indiana's 4 bobwhite management regions, 1947-2008. No surveys were conducted from 1958-1976.